Designing a pro-poor credit risk management system for financial inclusiveness: An empirical analysis

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Designing a Pro-poor Credit Risk Management System for Financial Inclusion: An Empirical Analysis

Abstract

Purpose – By drawing upon the institutional theory, the purpose of this study is to investigate the adoption of pro-poor credit risk management techniques by microfinance institutions (MFIs) in Ghana to promote a financially inclusive system.

Design/methodology/approach – Using primary data collected from 141 MFIs in Ghana, this study adopts a quantitative approach concentrating on a multiple regression analysis. Firstly, financial inclusion as the dependent variable was measured using 5 sub-variables. Secondly, a four-factor construct namely loan product flexibility, dynamic incentives, managerial training and collateral substitutes were designed to measure the pro-poor credit risk management techniques of MFIs as the independent variables. Finally, the cost of capital, operational zone and lending methodology were used as control variables. All items were measured on a Likert scale of five levels anchored by strongly agree (5) and strongly disagree (1).

Findings – Firstly, the study indicates that the adoption of suitable pro-poor credit risk management techniques such as loan product flexibility, dynamic incentives and managerial training is positively correlated with financial inclusion for the poor. Secondly, the study also found that the acceptance of collateral substitutes is still found to be flawed by MFIs in Ghana since it correlates negatively with financial inclusion. MFIs still request unfavourable collaterals from the poor which have the potential to exclude several individuals from engaging meaningfully in the financial system in Ghana.

Research limitations/implications – This study was carried out in the Greater-Accra region of Ghana. Even though the sample is large enough, it could not be generalised to all MFIs operating in Ghana. Therefore, its generalisation to the whole of Ghana could be limited as far as the findings are concerned. Secondly, this study depended heavily on quantitative analysis to come out with the results. The study could therefore benefit immensely from a triangulated method where the qualitative dimension could provide a deeper meaning to the findings in this study.

Originality/value – Empirical studies which focus on illuminating the determinants of financial inclusion using pro-poor credit risk management techniques is limited (Cámara et al. 2015). Therefore, research on pro-poor credit risk management practices of MFIs is new in the microfinance industry. The nature of credit risk management practices of MFIs regarding the poor determines to a large extent how financial inclusion is achieved in a country.

Keywords: Credit risk, Microfinance Institutions, Pro-poor, Quantitative Approach, Financial Inclusion

Paper Type: Research paper
Introduction

The current nature of microfinance delivery in developing countries with its associated competition, over-indebtedness of clients and the attrition of many microfinance institutions (MFIs) from the market, calls for a balanced attitude in managing both the social and financial objectives in an increasingly competitive manner (Joris Van et al. 2012). In order words, for MFIs to achieve their double bottom line of outreach and sustainability, the need to develop a credit risk management system which does not undermine the social objectives of the MFI but rather embraces both objectives is crucial than ever (Ayog-Nying Apanga, Opoku Appiah, and Arthur, 2016).

Credit risk refers to the possibility of an (MFI) losing money due to the inability, unwillingness or even delay on the part of the obligor (borrower) to honour an agreed contract due to several reasons (Bouteillé and Coogan-Pushner, 2013). Put in another way, it is the risk of default where the counterparty is unable to pay as agreed in the loan contract (Dubrana, 2010). In most cases, defaults result in the loss of earnings and capital to the MFI (Colquitt, 2007). Due to the severity of the impact of credit risk issues on the MFI as well as its stakeholders, MFIs are always tempted to apply stringent measures to secure their portfolios from deteriorating. It is not surprising that the microfinance industry is criticised for using cruel methods of loan collection which have caused many microfinance clients to even commit suicide in various parts of the world (Ashta, Khan, and Otto, 2015). Credit risk management in microfinance is therefore a necessary evil, which if not undertaken very well could lead to the exclusion of the very poor who microfinance is supposed to serve. This presents a dilemma for MFIs and the manner in which credit risk is managed would have a significant impact on financial inclusion and the engagement of the poor in contributing to economic growth in developing countries such as Ghana.

Undoubtedly, lending to the poor could be risky and costly to MFIs due to their erratic and vulnerable nature. This is one of the reasons the formal financial institutions, particularly in developing countries, consistently exclude the poor from accessing formal financial services (Deb and Suri, 2013; Ibtissem and Bouri, 2013). However, the essence of microfinance as a poverty reduction strategy for the poor cannot be far-fetched. Microfinance is expected to provide both financial and non-financial interventions to the economically active poor who is usually excluded from the formal financial system. It is supposed to help the poor to engage in some form of income-generating activity which is expected to have a positive impact on the borrower’s wellbeing as well his household (Dzansi and Atiase, 2014; Javid and Abrar, 2015). Therefore, for microfinance institutions to fully promote a financially inclusive system which embraces the peculiarities and needs of the poor, credit risk associated with the poor need to be understood, assessed, and managed effectively (Donou-Adonsoua and Sylwester, 2016).

In view of the above discussion, even though credit risk management is essential to safeguarding the credit portfolio, deposits and improve loan recovery of MFIs (Ayog-Nying Apanga, Opoku Appiah, and Arthur, 2016), lending to the poor particularly in developing countries where microfinance dominates demands effective credit risk management techniques which do not deny the poor the needed capital to engage in a meaningful venture (Dubrana, 2010). This is because when credit risk management practices of MFIs are too stringent, it has the potential of denying the poor access to the needed financial capital to engage in any entrepreneurial activity. If microfinance is not able to achieve this goal due to the use of inappropriate credit risk management methods which further financially excludes the very poor for which microfinance is intended to support, then it could be termed as a
mission drift (Mersland and Strøm, 2010; Xu, Copestake, and Peng, 2016). The crux of the matter is getting the right balance between the risk exposure of MFIs and the achievement of their poverty reduction goals. The Basel Committee on Banking Supervision (2006) in its Basel II document, has provided a framework for the microfinance sector which is expected to strike the right balance between the risk exposure of MFIs and the various costs associated with its delivery and the role of microfinance in ensuring a financially inclusive society. The framework provides guidelines regarding the measurement of capital adequacy and the ability of the MFI to assess the inherent risk that is associated with their lending activities (Joris Van et al, 2012). The guideline provides two main approaches to credit risk management by financial institutions including MFIs. MFIs can either chose to use the standardized approach of credit scoring which is executed by credit rating agencies or to internally quantify and rate their risk exposure. It has been observed that most MFIs adopt the latter approach by relying on their governance systems and intuition in identifying, assessing and managing their own risk (Gottschalk and Griffith-Jones, 2006; International Finance Corporation, 2011). This implies that MFIs are expected to have a strong credit risk management system which is able to provide the necessary safeguard for their loan portfolios. The International Financial Corporation (2011) also provides a risk management framework which includes targeting, underwriting, effective customer management, collection and capital management for emerging markets of which the microfinance sector could benefit from immensely.

Over the past two decades, the Ghanaian financial system has achieved some success in terms of ensuring a financially inclusive system which embraces the needs and peculiarities of the informal sector. Several programmes such as the Productivity Improvement and Income Generation Scheme which is popularly known as the Poverty Alleviation Fund (PAF) was introduced in 1993 as part of the District Assemblies Common Fund (Abdulai, Shafiuwu, and Mohammed, 2014). Similarly, the Microfinance and Small Loans Scheme was also introduced in 2006 as an apex microfinance body responsible for disbursing microcredit and other deliverables to provide an inclusive financial system (Odoro-ofori, 2014). The above programmes were expected to play a role in providing the necessary financial services for the financially excluded individuals to engage meaningfully in the economy. However, research evidence has shown that access to financial services and the cost associated with it continue to be a heavy burden on the operation of MSMEs (Abor and Quarley, 2010). It is therefore expected that the Ghanaian financial system needs an overhaul in terms of its guiding principles in providing a financially inclusive system which provides an equitable and fair access to financial resources to all individuals. In doing this, the role of the various regulatory institutions such as the Bank of Ghana is essential.

**Background**

*The importance of a financially inclusive system*

Promoting a financially inclusive system for the poor has become one of the major goals of development institutions as well as governments across the world (Sarma and Pais, 2011; Dorfleitner et al.,2016). Financial inclusion refers to a process where the individual has an equitable and a fair access to the formal financial system in a country for the purposes of financing their enterprises (Sarma and Pais, 2011). An inclusive financial system has the ability to allocate productive resources in an economy, improves national financial management, advances savings practices and helps in the reduction of informal credit such as money lenders which may be costly to the poor (Chikalipah, 2017). Microeconomic theory treats finance as a major factor of production notwithstanding the age and size of the firm and it is used as a capital investment, either for start-up or for expansion purposes (Kuzilwa,
2005). Financial capital is therefore seen as one of the most important entrepreneurial capital in any venture creation process (Baughn and Neupert, 2003). It is a widely-accepted phenomenon that a well-functioning financial system can help promote economic growth, especially in developing countries where access to credit is limited (Andrianova et al., 2008). Access to credit by micro, small and medium enterprises (MSMEs) for instance influences their business decisions as well as the type of economic goals to pursue (Bastiéa et al., 2016). It has also been observed that countries with a large financially inclusive system grow faster than those without. This is because a well-developed financially inclusive system reduces information and transaction costs, influences saving rates, investment decisions, technological innovation, and the growth of small businesses (Radhika and Ghosh, 2013).

Sarma and Pais (2011) indicate that, in measuring financial inclusiveness, the approach should be multidimensional in nature. Such measures should include for instance the number of unbanked individuals in a country, accessibility, availability, the design and offering of financial services and the usage of banking services. This implies that MFIs have a role to play in providing the necessary financial capital to the poor in support of business creation and national development (Balkienė and Jagminas, 2010). Without microfinance, many individuals in developing countries would be unable to create ventures which will provide a consistent income for themselves and their households (Helms, 2006; Mahmood et al. 2014).

**Microfinance as a financially inclusive strategy**

Globally, research has shown that the poor are usually excluded from formal financial systems (Deb and Suri, 2013; Ibitissem and Bouri, 2013). According to Akpalu et al. (2012), this exclusion can either be partial or total depending on the geographical location of the individual. In most developed countries, there exist a partial exclusion of the poor whereas there exist total exclusion in developing countries (Helms, 2006). It is this exclusion which has necessitated the provision of microfinance services geared towards serving the unbanked who lack access to credit (Laha and Kuri, 2015; Dorflleitner et al., 2016). Since the introduction of microcredit by the Bangladesh’s Grameen Bank in 1983, microcredit has become an important tool for financial inclusion through the provision of the needed entrepreneurial finance to the poor to engage in an income-generating activity where formal financial services are unwilling to support (Hussain, Maskooki, and Gunasekaran, 2001; Shahriar et al., 2016). In fact, the concept has metamorphosed into microfinance which comes with extended financial and non-financial services such as entrepreneurship training, money transfer services, the provision of savings facilities as well as micro insurance services to MSMEs which brings to the fore the provision of a holistic financial services to the poor (Dzansi and Atiase, 2014).

**Financial Inclusiveness in Ghana**

Ghana has seen several reforms which were aimed at promoting financial inclusiveness and economic development across the whole country particularly focusing on the MSME sector which was seen as lacking adequate financial structures to propel its growth. One of the major reforms which came with the promulgation of the Provisional National Defense Council (PNDC) Law 328 in 1993 saw the entrant of various Non-bank Financial Institutions (NBFIs) such as savings and loans companies, discount houses, leasing and hire-purchase companies, building societies and FNGOs across various parts of Ghana (Sanda & Sraha, 2011). The main reason for the introduction of this law is to effectively engage the private sector in the delivery of various kinds of financial services to individuals and enterprises which would help in revamping the economy and create a financially inclusive system (Annim & Alnaa, 2013). In addition to the PNDC law 328, the Non-Bank Financial Institutions’ Business Rules of the Bank of Ghana was also introduced in June 2000 which
brought various regulations regarding the management of NBFIs. In this regulation, issues such as portfolio management norms, corporate governance and rules regarding deposit-taking were clarified (Bank of Ghana, 2000; Sanda and Sraha, 2011).

Even though the above laws laid the foundation for an effective financially inclusive system in Ghana, current studies have shown that access to adequate and affordable credit for investment purposes remains a hurdle facing the MSME sector (Allen, Otchere, and Senbet, 2011). Specifically, issues of the availability of suitable credit products, the effectiveness of service provision, adequacy of loans granted as well as the cost of credit facilities are challenges that are still associated with the Ghanaian financial system (Egyir, 2010). The most recent population and housing census which was carried out in 2000, recounted that about 80% of Ghanaians work in the informal sector and largely these individuals lack access to any form of formal financial services. According to Akudugu (2013), the Ghanaian financial system is faced with two main challenges. Firstly, the system lacks the capacity to fully integrate the informal sector due to limited financial resources. Secondly, the type of rules and regulations governing the financial sector seems to be unfavourable to the informal sector hence the current gap which exists between the formal and the informal sectors. Based on the above discussion, this study has two main contributions to offer.

Firstly, research on MFI pro-poor credit risk management techniques is limited particularly in developing countries where microfinance has been commercialised to the extent that the poor are almost neglected from accessing financial capital (Abor and Quarley, 2010; Devi, 2017).

This study, therefore, contributes to the understanding of financial inclusiveness for the poor through the adoption of suitable credit risk management techniques such as flexible loan repayment methods, the use of dynamic incentives, acceptance of collateral substitutes and the provision of entrepreneurial training (Cámara et al, 2015). Secondly, this study also contributes to the understanding of the vital role of MFIs in the promotion of financial inclusion, particularly in developing countries (Brown, Guin, and Kirschenmann, 2016; Mader, 2016). MFIs are vital to the development of a financially inclusive system particularly in developing countries where a greater number of people are involuntarily excluded from the formal financial system.

Theory and hypotheses development

The institutional theory and the promotion of financial inclusion

Financial institutions, as well as other institutions that have the mandate to regulate the financial system of a country, have a major role to play in the promotion of a financially inclusive society. Studies of this nature therefore seek to analyse the various regulatory institutions which affect the access to financial resources by entrepreneurs in their attempt to create ventures and contribute to economic growth (Bruton et al. 2009; Su et al., 2016).

According to North (1990), various institutional factors could affect the growth of entrepreneurship and access to resources in a country. Most importantly, such institutions may affect the way entrepreneurs behave and exploit various opportunities in pursuit of their entrepreneurial dreams (North, 1990; Scott,1992; Naude, 2010). In the context of Ghana, the Bank of Ghana which is Ghana’s Central Bank provides the regulatory mechanisms by which MFIs are governed and the type of products that are offered to their clients (Bank of Ghana, 2015). Since 2011, the Bank of Ghana has introduced stringent regulatory mechanisms into the microfinance sector which allowed existing MFIs to regularise their operations whiles new ones were expected to meet licensing requirements to gain an operating license (Bank of Ghana, 2015). There are three main sources of regulation for MFIs in Ghana. These include

The institutional theory also encapsulates institutional void whereby several institutions which are set up to support access to financial resources in developing countries are either void or unavailable (Sutter et al., 2013; Kistruck, et al, 2015). An institutional environment of a country is deemed to be weak if it lacks the necessary capacity and resources to ensure that financial markets work effectively to promote financial inclusion (Kistruck et al, 2015). In North’s perspective, an effective institutional framework of a country should be able to establish and define an incentive system, property rights, access to markets, access to entrepreneurial resources, production standards and many other regulatory mechanisms which are essential for creating an inclusive financial system which meets the needs of everyone. If the above factors are absent in a country, such a system can be deemed to be weak. The Ghanaian financial system which is noted to be bureaucratic and corrupt coupled with excessive business restrictions and taxation hinder the effectiveness of providing an inclusive financial system which meets the needs of MSMEs (Shirokova and Tsukanova, 2013; Alajaty, 2017). A recent study of Boateng (2015) recounted that even though the Ghanaian microfinance system has grown rapidly, the sector is still saddled with a lot of challenges such as high operational cost, weak support for institutional and human capacity development and poor institutional infrastructure and this has culminated into a high loan default. There is therefore the need for public policy to be directed towards the development of the informal sector and how it can be integrated into the formal financial system for a holistic economic growth (Nielsen, 2016; Palamida et al. 2017). The various hypotheses are developed below.

Loan product flexibility and financial inclusion for the poor

The design and provision of flexible loan products by MFIs promotes financial inclusion for the poor in a country. The poor should be given loans with flexible loan repayment conditions which does not put a burden on their financial resources (Duan, Han, and Yang, 2009). Meyer (2002:351) argue that providing a standardised loan product with a ‘one-size fits all’ terms and conditions to the poor may increase the risk of lending to the poor and increases their vulnerability. The expectation is that MFIs are expected to design suitable financial products which meet the peculiar needs of the poor in terms of the interest rates, repayment schedules, the loan administration and even the loan approval process itself may be an incentive for financial inclusion (Meyer, 2002). Loan product flexibility also has the tendency to increase patronage of such products and thereby reducing dropout rates from microfinance programmes. Wright (2000) argues that the lack of flexible loan products in the microfinance industry is one of the most important issues affecting the success of MFIs which are aimed at promoting financial inclusion in their respective countries. Also, Field and Pande (2008) find in a related study that microfinance loan contracts which require clients to start payments nearly immediately without any moratorium after disbursement are detrimental to the success of MSMEs, hence a hindrance to financial inclusion. Field and Pande (2008) conclude that a more flexible loan product design can significantly lower transaction cost for the entrepreneurial poor as well as prevents defaults in loan repayments. It is therefore important for MFIs to endeavour to design loan products that are flexible and takes into consideration the needs, aspirations and the peculiarities that are associated with the informal sector where most financially excluded individuals find themselves. Based on the above discussion and evidence in the literature, the study hypothesised as follows:
**H1a:** The provision of flexible loan products is positively related to financial inclusion for the poor.

**Dynamic incentive schemes and financial inclusion for the poor**

The use of dynamic incentive as a credit risk management technique in microfinance has been found to contribute greatly to promoting financial inclusiveness for the poor in a country. Based on the “five Cs” of credit management (character, capital, collateral, capacity and conditions) microfinance clients could be provided with an incentive system which encourages repayment as well as a continuous participation in a microfinance programme (Gyamfi, 2012). A dynamic incentive refers to the ability of the MFI to increase motivation for its services among clients through the use of innovative techniques and methods (Tedeschi, 2006). It has been indicated that since MFIs do not have the sophisticated credit scoring mechanisms and a sound legal system to enforce loan contracts, the use of innovative dynamic incentive techniques to motivate clients could improve financial inclusiveness and can overcome information asymmetry challenges which is one of the major challenges hindering informal businesses from accessing formal financial resources (Tedeschi, 2006; Mbonyane and Ladzani, 2011). According to Sinn (2013), group lending techniques where members are made to self-select and co-guarantee for themselves in a loan contract could be used as a dynamic incentive to reduce the moral hazard associated with the informal sector as well as the lender's cost. Kumar (2012) also argue that the joint liability which is associated with group lending also creates an incentive for internal monitoring and credit control. Morduch (1999) catalogues a number of dynamic incentives such as access to future loans, increase in loan sizes (progressive lending), and quick loan approval processes which can serve as a dynamic incentive to improve the poor’s repayment ability. These dynamic incentives according to Shapiro (2015) could also prevent multiple borrowing or double-dipping among microfinance clients. Baklouti (2013) indicates that the use of non-financial services such as entrepreneurial training, direct monitoring and non-refinancing threats could motivate microfinance clients to improve their repayment and thereby promoting financial inclusion. The role of dynamic incentives in managing the risk associated with microfinance and its impact on financial inclusion can therefore not be under-emphasised. Based on the above discussion and evidence in the literature, the study hypothesised as follows:

**H1b:** The provision of dynamic incentive is positively related to financial inclusiveness for the poor

**The acceptance of collateral substitutes and financial inclusion for the poor**

Collateral is an asset provided by a borrower to a lender as a security to be kept until a loan is fully paid back. Usually collateral determines access to the financial market where individuals and enterprises need to borrow for investment purposes. In case of default, such collateral is sold to pay off the outstanding loan (Balkenhol and Schütte, 2001). Lee et al (2015) argue that a well-designed microfinance programme which seeks to promote financial inclusion for the poor should focus on the acceptance of collateral substitutes which does not require SMEs to provide ‘hard collateral’ such as landed properties to secure their loans. Bond and Rai (2002) indicate that the success of a microfinance programme depends on the acceptance of collateral substitutes in place of a physical collateral to address issues of information asymmetry and adverse selection challenges. Yorulmaz (2013) indicates that lending requirements which demand the provision of physical collateral to secure loans have the tendency to restrict several poor people from participating fully in a formal financial
system of a country. Collateral substitutes such as the use of social sanctions, savings deposits, stock pledging, and the use of guarantors are encouraged in the microfinance industry instead of requesting borrowers to provide landed properties which is a practice in commercial banking (Balkenhol and Schütte, 2001; Bond and Rai, 2002). Menkhoff et al. (2012) also recommend the use of other types of collateral substitutes such as lending relationship, loan maturity, loan size and covenants to reduce credit risk and informational asymmetry. It is therefore expected that MFIs discourage the demand for physical collateral from the poor to secure their loans which is likely to undermine financial inclusion in a country. Based on the above discussion and evidence in the literature, the study hypothesised as follows:

**H1c:** The acceptance of collateral substitutes is positively related to financial inclusion for the poor.

*The provision of managerial training and financial inclusion for the poor*

One of the utmost concerns in entrepreneurial research is the failure rate of SMEs particularly in developing countries which requires an investigation into the various causes. For instance, it has been estimated that about 50% of SMEs in South Africa fail within the first three years of operation (Mudambi and Treichel, 2005). This rapid rate of failure has been attributed to lack of preparedness and weak managerial capital (Ladzani and Van Vuuren, 2002; Macpherson and Jayawarna, 2007). There is, therefore, a growing agreement in the entrepreneurship literature which suggests that the provision of entrepreneurship training to the poor produces a positive impact on the venture as far as business continuity is concerned (Chi et al., 2008; Newman et al., 2014). Entrepreneurship training refers to training programmes that are aimed at supporting entrepreneurs using both structured and unstructured courses to inform, train and educate on essential business and management skills (Chowdhury 2009; Azila-Gbettor and Adjimah, 2013). Entrepreneurship training can be diverse ranging from a single consultation to a long training which can be individually tailored or group-based, focusing on financial education, business management, marketing, accounting, or vocational skills (Newman et al., 2014; Boukamcha, 2015). The argument is that, since entrepreneurship training has a positive impact on MSMEs as far as continuity is concerned, it ensures financial inclusion since it encourages the continuous use of financial services from MFIs. Therefore, to both ensure business continuity and financial inclusion, the poor need to be provided with a consistent and content-rich training which equips the MSME owner with the necessary management skills to propel the growth and management of their businesses in order to derive the maximum benefit to themselves and to the country at large (Odell, 2010; Drexler et al., 2014; Aldén and Hammarstedt, 2016). Based on the above discussion and evidence in the literature, the study hypothesised as follows:

**H1d:** The provision of managerial training is positively related to financial inclusion for the poor.

Figure I below show the conceptual framework indicating the relationship between the discussed MFI pro-poor credit risk management techniques and financial inclusion.
**Figure I**: A hypothesised model for pro-poor credit risk management techniques of MFIs and financial inclusiveness

![Diagram](image)

**The research context and method**

**The Research Context**

Managing credit risk could be a daunting task for financial institutions. The process is more laborious for MFIs who have to deal with the poor coupled with the fact that they have to meet both the financial and social objectives of their various organisations. However, the role of credit risk management cannot be underemphasized. Traditionally, most credit risk models are based on the application credit scoring system where social, demographic, financial and other kinds of data are analysed to determine or predict a loan applicant’s ability to pay (Paleologo, Elisseeff, and Antonini, 2010). The International Finance Corporation (2011) indicate that an effective institutional framework for managing credit risk should consist of five main processes as shown in Figure 2 below.
Figure 2: The Institutional credit risk management framework

Source: International Finance Corporation (2011)

Even though studies such as Bumacov, Ashta, and Singh (2017) prescribe credit scoring system for the microfinance sector, many other researchers argue that the sector cannot handle the kind of rigour which traditional credit scoring systems go through due to the vulnerability of the users and poverty-orientation of the MFI themselves (Joris Van et al., 2012). In fact, the 2011 financial crises show that having an elaborate credit risk management system alone might not be enough to deal with the risk exposure in the financial sector. It is in this context that the researchers in this study designed and investigated a pro-poor approach to credit risk management which promotes financial inclusion for the poor without necessarily impairing the loan portfolio of the MFIs. We base our argument on the customer management segment of the IFC framework to argue that, MFIs need to approach the credit risk management function from a human point of view instead of the credit scoring which in most cases comes with various challenges.

The principal purpose of this study is to investigate the use of pro-poor credit risk management techniques by MFIs in Ghana to promote financial inclusion. One of the challenges facing several economies particularly that of developing countries is how to integrate the informal sector into the formal financial system as a holistic approach to economic growth (Radhika and Ghosh, 2013). In the case of Ghana, the formal financial sector has not been able to embrace this sector adequately. The most reason which is given includes the unavailability of data from the sector and the lack of collateral on the part of MSMEs to support loan applications (Lash, 2008). Even though access to credit by the poor is a global challenge, the situation in Ghana is more precarious which makes the development of entrepreneurial opportunities very difficult (Bowen et al. 2009). It is also important to note that commercial banks in Ghana have almost neglected the informal sector in their lending activities and concentrated their efforts on large formal businesses who are able to provide the necessary collateral in support of loan applications (Kuzilwa, 2005). This situation usually pushes the poor to borrow from various other informal sources, which usually comes with a higher cost and thereby increases the cost of doing business for MSMEs (Fatoki, 2011; Ahmed and Nwankwo, 2013). In view of the above, the Ghanaian government has not achieved much in terms of making credit affordable, accessible and timely for the poor to undertake any enterprise activities. Fatoki and Odeyemi (2010) therefore argue that the availability of trade credit and other financial capital opportunities for the poor could promote financial inclusion through entrepreneurial development.

Sample and data

This study was conducted in the Greater-Accra region which is the capital city of Ghana. The Greater-Accra region was chosen because the head offices of most MFIs are concentrated here. Secondly, the officers and managers who matter in making decisions regarding credit risk are located at the head offices of the MFIs. It is therefore logical to undertake this
research in the Greater-Accra region to investigate the pro-poor credit policies that MFIs make to promote financial inclusion for the poor. In coming out with the results, a stratified random sampling (SRT) with a multiple regression analysis was adopted. Multiple regression analysis was used because the study sought to explain the relationship between financial inclusion which is the dependent variable and a number of predictor variables which includes loan flexibility, dynamic incentives, managerial training and the acceptance of collateral substitutes. The mean score of these items was obtained by aggregating the variables which were used in the regression model. Based on the SRT, two major strata were identified namely Tier I and II MFIs in the Greater-Accra region. Based on these strata, and using the sample size determination formula of Yamane (1967), a total of 378 officers and managers of 141 Tiers I and II MFIs were sampled from a sample frame of 564. The total population for this study was 893. In September 2016, a total of 564 questionnaires were sent out to the 141 MFIs to be completed. Out the total sent out, 378 fully completed questionnaires were retrieved generating a response rate of 67.02%. The respondents include five categories of credit risk staff namely credit officers, credit risk managers, credit managers, finance managers and operations managers. These categories of staff were selected because the researchers believed their day-to-day credit risk decisions have an impact on the promotion of financial inclusion for the poor as far as MFIs in Ghana are concerned. The Table 1 below shows the profile of the respondents.
Table I: Profile of sampled MFI officers and managers

<table>
<thead>
<tr>
<th>Category of Officers</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Years of Experience</th>
<th>Percentage</th>
<th>Qualification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit Officers</td>
<td>111</td>
<td>29</td>
<td>1-3</td>
<td>10</td>
<td>Diploma</td>
</tr>
<tr>
<td>Credit Risk managers</td>
<td>75</td>
<td>20</td>
<td>3-5</td>
<td>25</td>
<td>First Degree</td>
</tr>
<tr>
<td>Credit Managers</td>
<td>64</td>
<td>17</td>
<td>5-8</td>
<td>19</td>
<td>Master’s degree</td>
</tr>
<tr>
<td>Finance Managers</td>
<td>98</td>
<td>26</td>
<td>8-12</td>
<td>20</td>
<td>Doctorate</td>
</tr>
<tr>
<td>Operations Managers</td>
<td>30</td>
<td>8</td>
<td>12+</td>
<td>26</td>
<td>Professional</td>
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<td></td>
<td><strong>378</strong></td>
<td><strong>100</strong></td>
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</table>
Constructs and measures

Dependent variable
Financial inclusion remains one of the major variables of measuring financial development and economic growth in a country (Dipasha, 2016). The concept refers to the process where all individuals in a country have access and can use the formal financial system to pursue both personal and enterprises goals (Sarma and Pais, 2011). The dependent variable for this study is, therefore, financial inclusion. Several variables have been used in the microfinance literature to measure financial inclusion across countries. Some of these variables include access to formal accounts, access to formal credit, and access to savings products (Demirguc-Kunt and Klapper, 2012). However, in this study, the researchers have investigated financial inclusion from the management’s decision-making point of the MFIs regarding credit risk management and how such decisions feed into the financial inclusion agenda of Ghana (Musau, Muathe, and Mwangi, 2018). Five (5) items were used to measure the financial inclusion strategy of MFIs engaged in this study through their lending decision. These items are as follows: Firstly, respondents were asked to rank the categories of clients they currently serve (extreme poor, moderate poor, vulnerable non-poor, non-poor, wealthy). Secondly, respondents were also asked to rank categories of loans offered to clients (agricultural loans, micro-enterprise loans, long-term loans, short-term loans). Thirdly, respondents were also asked to rank the criteria for need-based lending, branch expansion and the selection of operational zones. Each of the above item was measured on a Likert scale of five levels anchored by strongly agree (5) and strongly disagree (1) indicating the levels of agreement of managers for each item measuring financial inclusion.

Independent variables
Microfinance institutions in Ghana could promote financial inclusion through the adoption of pro-poor credit risk management techniques rather than adopting stringent credit risk measures which have the tendency to further widen the financial access gap which currently exists in Ghana (Field and Pande, 2008). MFIs are expected to design and provide suitable loan products which meet the peculiar needs of the poor considering suitable interest rates, repayment schedules, the provision of managerial training and even the nature of the loan approval system itself. Other MFIs use what is referred in the microfinance literature as dynamic lending whereby interest rates and loan sizes are adjusted for targeted MSMEs which could serve as an incentive for effective repayment (Ahlin and Waters, 2016). Meyer (2002) argue that these techniques could provide incentives for repayment just like the formal credit risk management methods. Arguing from this perspective and following both Meyer (2002) and Wright (2000) a four-factor construct namely loan product flexibility, (LPF), dynamic incentives (DI) managerial training (MT) and collateral substitutes (CS) were designed to measure the pro-poor credit risk management techniques used by the MFIs to promote financial inclusion for the poor in Ghana.
Firstly, loan product flexibility has been measured using three (3) items namely flexibility of repayment schedule, flexibility of loan repayment amount (loan instalment) and the convenience of loan term to meet business needs. Secondly, dynamic incentive has been measured using three (3) items namely progressive lending, quick approval process and loan monitoring. Thirdly, managerial training was measured using four (4) items namely content of training, cost of training, satisfaction with training and whether training enables knowledge application. Finally, the collateral substitute was measured using three (3) items namely acceptance of savings deposits, the use of guarantors and goodwill between the clients and the MFI. Each of the above item was measured on a Likert scale of five levels.
anchored by strongly agree (5) and strongly disagree (1) indicating the levels of agreement of managers for each item measuring financial inclusion.

Control variables
The delivery of microfinance for financial inclusion could be influenced by several factors. Some of these factors include the cost of capital, the choice of operational zone and the lending methodology adopted by the MFI (Abbink et al. 2006; Baklouti, 2013). Yorulmaz (2013) also indicates that gender-based lending could also restrict some segments of society not to be able to participate fully in a formal financial system and this can create inequality in a country. MFIs also use either group or individual based lending schemes to reach out to their clients. With the joint liability feature of the group lending schemes, MFIs can harness the social collateral and peer pressure which serves as an incentive for loan repayment (Hermes and Lensink, 2007; Giné & Karlan, 2014). Therefore, any of the above delivery methods, thus whether group, or individual strategy, nor whether it is gender or non-gender based, and even the cost of capital could influence the nature of financial service delivery and ultimately financial inclusion in a country. Based on the above evidence from the literature, the study controlled for cost of capital, operational zone (urban versus rural) and lending methodology (group or individual lending).

Reliability and validity of constructs
The study utilised Cronbach’s α to test the reliability and internal consistency of all the variables. As Table II shows, all variables (both dependent and independent) indicating Cronbach's α scores of 0.700 and above are considered reliable and internally consistent (Hair, Black, Babin, & Anderson, 2010). The results indicate that all the constructs used in this study are highly reliable (loan product flexibility = 0.885; dynamic incentive = 0.882; managerial training = 0.863; collateral substitutes = 0.737; financial inclusion = 0.904).

In terms of content validity, Parasuraman et al. (1988) argue that the content validity of a construct depends on the extent to which the construct items measure the themes accurately. The constructs used in this study are believed to possess content validity because the constructs were sourced from the financial inclusion as well as the microfinance credit risk literature such as Sarma and Pais (2011), Colquitt (2007) and Câmara et al. (2015). For the control variables, content validity is based on studies such as Yorulmaz (2013) as well as Abbink et al. (2006). Table II presents the results of the reliability test of the variables used in this study.
Table II: Cronbach’s alpha test of reliability for MFI pro-poor credit risk management techniques

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Cronbach’s Alpha</th>
<th>Cronbach’s Alpha Based on standardised items</th>
<th>No. of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Loan product Flexibility</td>
<td>0.885</td>
<td>.892</td>
<td>3</td>
</tr>
<tr>
<td>(2) Dynamic Incentives</td>
<td>0.882</td>
<td>.886</td>
<td>3</td>
</tr>
<tr>
<td>(3) Managerial Training</td>
<td>0.863</td>
<td>.861</td>
<td>4</td>
</tr>
<tr>
<td>(4) Collateral Substitute</td>
<td>0.737</td>
<td>.745</td>
<td>3</td>
</tr>
<tr>
<td>(5) Financial Inclusion</td>
<td>0.904</td>
<td>.911</td>
<td>5</td>
</tr>
</tbody>
</table>

Exploratory factor analysis

To check the common method bias in this study and following Anderson and Gerbing (1988), an exploratory factor analysis using Principal Component Analysis (PCA) with varimax rotation was executed on the pro-poor credit risk management techniques of the MFIs. From the process, no dominant factor emerged to have explained a significant variance in financial inclusion hence common method bias is not a concern in this study. It is suggested that factors with low factor loadings (< 0.50 for new models, < 0.60 for existing models) should be deleted first and data recalculated until a higher value of 0.7 and above is achieved (Hancock and Mueller, 2010; Sidek and Mohamad, 2014). Four factors with an Eigenvalue greater than 1.000 arose and were consistent with the proposed constructs respectively representing loan product flexibility, dynamic incentives, managerial training, and collateral substitutes. Both the Kaiser-Meyer-Olkin statistic and the Bartlett Test of Sphericity were checked to confirm the validity and sampling adequacy for the variables in the model. The KMO value of 0.797 which is higher than the recommended threshold value of 0.7 indicates an acceptable sampling adequacy. The Bartlett Test of Sphericity ($\chi^2=3,473.472, \text{df}=66, p=0.000$) is also significant at 1% level.

The four factors representing the various constructs explained a total of 77.9 % of the variance in pro-poor credit risk management techniques. From the analysis, loan product flexibility emerged as the most important factor with an Eigenvalue of 3.152, explaining 26.2% of the variance whilst collateral substitute is the least important factor with an Eigenvalue of 1.562 and explaining 13.0 % of the variance in pro-poor credit risk management techniques of MFIs. Factor loadings were only considered to have loaded properly if they had a loading of 0.200 or above on a factor whereby the difference between the main loading and other cross-loadings were more than 0.300 (Howell et al. 2005). Table III below shows the factor loadings and cross-loadings of items of the pro-poor credit risk management constructs.
Table III: Exploratory factor analysis for pro-poor credit risk management techniques of MFIs

<table>
<thead>
<tr>
<th>Factors</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Flexibility of repayment schedule</td>
<td>.127</td>
<td>-.056</td>
<td>.928</td>
<td>.007</td>
</tr>
<tr>
<td>2. Loan repayment amount (instalment)</td>
<td>.104</td>
<td>.017</td>
<td>.915</td>
<td>-.028</td>
</tr>
<tr>
<td>3. Convenient loan term</td>
<td>.031</td>
<td>-.135</td>
<td>.787</td>
<td>-.113</td>
</tr>
<tr>
<td>4. Progressive lending</td>
<td>-.077</td>
<td>.061</td>
<td>-.019</td>
<td>.764</td>
</tr>
<tr>
<td>5. Quick approval process</td>
<td>-.034</td>
<td>.055</td>
<td>-.054</td>
<td>.873</td>
</tr>
<tr>
<td>6. Loan monitoring</td>
<td>-.058</td>
<td>.120</td>
<td>-.053</td>
<td>.788</td>
</tr>
<tr>
<td>7. Training content</td>
<td>.907</td>
<td>.027</td>
<td>.083</td>
<td>.073</td>
</tr>
<tr>
<td>8. Training cost</td>
<td>.930</td>
<td>.084</td>
<td>.081</td>
<td>-.132</td>
</tr>
<tr>
<td>9. Training satisfaction</td>
<td>.856</td>
<td>.025</td>
<td>.101</td>
<td>-.147</td>
</tr>
<tr>
<td>10. Knowledge application</td>
<td>.025</td>
<td>.833</td>
<td>.027</td>
<td>.129</td>
</tr>
<tr>
<td>11. Acceptance of savings deposits</td>
<td>.057</td>
<td>.929</td>
<td>-.108</td>
<td>.079</td>
</tr>
<tr>
<td>12. The use of Guarantors</td>
<td>.044</td>
<td>.928</td>
<td>-.118</td>
<td>.052</td>
</tr>
<tr>
<td>13. The use of borrower’s goodwill</td>
<td>.031</td>
<td>.926</td>
<td>-.113</td>
<td>.042</td>
</tr>
<tr>
<td>14. Eigen Values</td>
<td>3.152</td>
<td>2.698</td>
<td>1.948</td>
<td>1.562</td>
</tr>
<tr>
<td>15. % of variance explained</td>
<td>26.265</td>
<td>22.481</td>
<td>16.232</td>
<td>13.014</td>
</tr>
<tr>
<td>16. KMO</td>
<td>.797</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Bartlett’s Test of Sphericity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approx. Chi-Square</td>
<td>3473.472</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>df</td>
<td>66</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Statistical analyses and results

Table IV below presents the descriptive statistics in terms of the mean and standard deviations of both the dependent and independent variables. It also shows the correlations among the variables. The regression analysis of all the variables (predictors, control and dependent) are also presented in Table V. Using a multiple linear regression analysis, two separate regression models were run. Model 1 which is the restricted model is executed only with the control variables (cost of capital, operational zone and lending methodology) and the dependent variable (financial inclusion). Model 2 which represents the full regression model, is executed using the four independent variables (loan product flexibility, dynamic incentives, managerial training and collateral substitutes), the dependent variable and all the control variables as indicated above. The purpose of executing these two models is to examine the level of influence of the control variables in the relationship. Secondly, it allows the impact of the independent variables to be examined when they are introduced into the relationship. This is done by examining the adjusted $R^2$ of each model.
Table IV: Descriptive statistics and correlations among variables

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Financial Inclusion</td>
<td>4.25889</td>
<td>0.464769</td>
<td>378</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Loan product Flexibility</td>
<td>3.99209</td>
<td>1.003812</td>
<td>378</td>
<td>0.279***</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Dynamic Incentives</td>
<td>4.04743</td>
<td>0.518047</td>
<td>378</td>
<td>0.308***</td>
<td>-0.014</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Collateral Substitutes</td>
<td>4.22480</td>
<td>0.780316</td>
<td>378</td>
<td>-0.013</td>
<td>0.104**</td>
<td>-0.019</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Entrepreneurial Training</td>
<td>4.09042</td>
<td>0.609822</td>
<td>378</td>
<td>0.258***</td>
<td>0.333**</td>
<td>0.097**</td>
<td>0.280***</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Cost of Capital</td>
<td>4.95257</td>
<td>0.212769</td>
<td>378</td>
<td>0.124**</td>
<td>0.035</td>
<td>0.020</td>
<td>-0.013</td>
<td>0.048</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Operational Zone</td>
<td>4.00000</td>
<td>0.660033</td>
<td>378</td>
<td>0.252***</td>
<td>0.000</td>
<td>0.429***</td>
<td>-0.111**</td>
<td>0.014</td>
<td>0.014</td>
<td>1.000</td>
</tr>
<tr>
<td>8</td>
<td>Lending Methodology</td>
<td>5.00395</td>
<td>1.058667</td>
<td>378</td>
<td>0.284***</td>
<td>0.217***</td>
<td>0.157***</td>
<td>0.111**</td>
<td>0.158***</td>
<td>0.124*</td>
<td>0.079**</td>
</tr>
</tbody>
</table>

Note: The table above shows the correlation among all the variables. The levels of significance (1-tailed) are *p<0.1, **p<0.05, ***p<0.01.
Table V: Regression analysis of pro-poor credit risk management techniques and financial inclusion

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th></th>
<th></th>
<th></th>
<th>Model 2</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficients (β)</td>
<td>Std. Error</td>
<td>Sig.(p)</td>
<td>VIF</td>
<td>(β)</td>
<td>SE</td>
<td>Sig.(p)</td>
<td>VIF</td>
</tr>
<tr>
<td>Cost of Capital</td>
<td>-.196**</td>
<td>0.091</td>
<td>0.032</td>
<td>1.016</td>
<td>-.178**</td>
<td>0.085</td>
<td>0.038</td>
<td>1.018</td>
</tr>
<tr>
<td>Operational Zone</td>
<td>.162***</td>
<td>0.029</td>
<td>0.000</td>
<td>1.006</td>
<td>.097**</td>
<td>0.030</td>
<td>0.001</td>
<td>1.242</td>
</tr>
<tr>
<td>Lending Methodology</td>
<td>.112***</td>
<td>0.018</td>
<td>0.000</td>
<td>1.022</td>
<td>.075***</td>
<td>0.018</td>
<td>0.000</td>
<td>1.107</td>
</tr>
<tr>
<td>Loan product</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dynamic Incentives</td>
<td>.185***</td>
<td>0.039</td>
<td>0.000</td>
<td>1.264</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collateral Substitutes</td>
<td>-.046*</td>
<td>0.024</td>
<td>0.058</td>
<td>1.110</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Managerial Training</td>
<td>.123***</td>
<td>0.033</td>
<td>0.000</td>
<td>1.229</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

R = .376                      
R² = .141                      
Adjusted R² = .136            
ANOVA F = 27.526              
F Change = 27.526             
Sig. F = .000                 
N = 378                       

Note: *p<0.1, **p<0.05, ***p<0.01
From the full regression model (model 2), loan product flexibility ($\beta=0.091$, $p=0.000$) is statistically significant at the 1% level. This implies a unit increase in loan product flexibility increases financial inclusion by 9.1%. The first hypothesis, $H_{1a}$ is therefore accepted. Secondly, dynamic incentive ($\beta=0.185$, $p=0.000$) is statistically significant at 1% level. A unit increase in dynamic incentive, therefore, increases financial inclusion by 18.5%. In this case, also, hypothesis $H_{1b}$ is confirmed for a dynamic incentive having a positive relationship with financial inclusion in Ghana. Thirdly, collateral substitute ($\beta=-0.048$, $p=0.058$) is partially significant at 10% level. This implies a unit increase in collateral substitute leads to a 4.8% decrease in financial inclusion. Hypothesis $H_{1c}$ is therefore rejected. Finally, managerial training ($\beta=-0.123$, $p=0.000$) is statistically significant at the 1% level. A unit increase in managerial training, therefore, leads to a 12.3% increase in financial inclusion for the poor. Hypothesis $H_{1d}$ is therefore accepted in this regard.

Regarding the control variables, cost of capital ($\beta=-0.178$, $p=0.038$) is statistically significant at 5% level. This implies a unit increase in the cost of capital decreases financial inclusion for the poor by 17.8%. Operational zone ($\beta=0.097$, $p=0.001$) is statistically significant at 5% level. A unit increase in the coverage of the operational zone of MFIs increases financial inclusion by 9.7%. Finally, lending methodology ($\beta=0.018$, $p=0.000$) is statistically significant at 1% level. This implies a unit increase in the effectiveness of the current lending methodologies of MFIs in Ghana would lead to a 1.8% increase in financial inclusion for the poor. The research results, therefore, support $H_{1a}$, $H_{1b}$ and $H_{1d}$ which implies that there is a positive correlation between loan product flexibility, dynamic incentives, managerial training and financial inclusion for the poor in the operation of Tier I and II microfinance institutions in Ghana. However, $H_{1c}$ is negatively related to financial inclusion for the poor in Ghana.

In this study, multicollinearity is not a major concern. This is evidenced by the relatively low intercorrelations among the variables. Also, the low variance inflation factor (VIF) confirms this assertion that multicollinearity is low. The highest VIF value which is 1.264 is within the acceptable range of 3.0. This indicates that the model is relatively strong. To assess the overall fitness of the model, ANOVA $F$-values were also inspected. In the restricted regression model (model 1), the $F$-value is 27.526. However, in the full regression model, the $F$-value is 24.236 which are all significant at the 1% level indicating a strong model. $R^2$ is another value which can indicate the overall fitness of the regression model. In the restricted model, the $R^2$ is 0.541 and its adjusted $R^2$ is 0.536. In the full regression model, the $R^2$ is 0.654 and its adjusted $R^2$ is 0.644. This explains that both the restricted model and the full regression model can explain 53.6% and 64.4% (using adjusted values) respectively of the variances in financial inclusion. Also checking the difference in both adjusted $R^2$, a variance of 0.108 exist which shows that the explanatory variables have an impact on the dependent variable.

**Discussion of empirical results**

*The offer of flexible loan product increases financial inclusion for the poor*

The results as obtained in this study shows that both Tiers I and II MFIs in Ghana offer flexible loan products as a strategy to manage the credit risk associated with their lending activities to the poor. This strategy is also found to have a positive impact on financial inclusion in Ghana. The tenor of most microfinance loans in Ghana ranges from six months
to one year. Usually, borrowers are made to pay on flexible weekly or monthly basis depending on the cash flow pattern of the business. As noted by Donou-Adonsoua and Sylwester (2016), if microcredit repayment is short-term and does not take into consideration the peculiar needs of the poor, it increases the difficulties in meeting loan terms. This eventually leads to loan default which does not improve financial inclusion for the poor. In a related study, Fatoki (2011) indicates that MSMEs need to be provided with trade credit and other long-term credit facilities which make the venture creation and management process less costly for the poor.

The flexibility of loan products in terms of repayment supports the growth of MSMEs which are noted to have scarce resources (Abor & Quartey, 2010). Flexible loan products which do not put an undue pressure on the cash flow of the MSME prevent loan default and encourages MFI clients to continuously participate in a microfinance programme (Duan et al. 2009). Therefore, the structuring of microcredit to MSMEs whereby such loans are given on a long-term basis with a flexible weekly or monthly instalment will improve the cash flow of the enterprise as well as ensures profitability (Gallardo, 2001). It is expected that MFIs always take into consideration the gestation period of the projects they finance.

*The use of dynamic incentives increases financial inclusion for the poor*

The results from this study regarding the use of dynamic incentives as a pro-poor credit risk management technique by MFIs in Ghana is found to have a positive impact on financial inclusion. MFIs in Ghana are found to use several dynamic incentives such as progressive lending, group lending, regular repayment schedules, interest discounts and quick loan approval processes which motivates clients’ in their repayment behaviour (Morduch, 1999).

Shapiro (2015) indicates that such dynamic incentives could prevent multiple borrowing where clients borrow from several MFIs at the same time. Tedeschi (2006) argues that since MFIs do not have any sophisticated systems to calculate credit scores of their borrowers, they have to rely on using dynamic incentives as a credit risk management technique to induce motivation for repayment. It has also been observed that group lending has the capacity to induce motivation for effective repayment for MFI loans (Tedeschi, 2006; Sinn, 2013). The joint liability and the social collateral which is created in group lending methodology is essential particularly in rural communities where social sanctions could be used to prevent default. Kumar (2012) also argues that such joint liability programmes also create an incentive for internal monitoring and credit control which reduces the cost of operation of the MFI. Several other studies such as Abbink et al. (2006) and Baklouti (2013) supports the finding in this study where group lending methodologies were found to increase microfinance loan repayment which eventually influences financial inclusion for the poor.

*Current usage of collateral substitute does not promote financial inclusion for the poor*

The results indicate that the use of collateral substitute has a negative impact on financial inclusion for the poor in Ghana. Most MFIs in Ghana currently do not encourage the use of collateral substitutes but rather request physical collaterals which puts an undue pressure on the poor to meet such demands and this ultimately discourages clients’ participation in microfinance programmes. Lee et al (2015) argue that a microfinance programme which is intended to promote financial inclusion for the poor should be able to accept collateral substitutes which do not unduly affect the operation of the enterprise. Bond and Rai (2002) also indicate that the success of a microfinance programme depends on the use of collateral substitutes in place of physical collateral to address issues of information asymmetry and adverse selection challenges which eventually influences financial inclusion (Yorulmaz, 2013). More importantly, it has been observed that several of the collateral substitutes required by the MFIs in Ghana do not promote financial inclusion. For instance, some MFIs
keep between 20 to 25% of the loans granted to MSMEs as a cash collateral. This implies that such businesses are denied the use of the full loan fund for the operation of the business even though they are made to pay interest on the full loan amount granted. It was also observed that some of the MFI s require borrowers to save with them for six months before loans are granted to them. In such instances, interest was not paid on such savings accounts and these monies are given back as loans to the borrowers for which they are made to pay interest on. This was found to discourage MFI clients from accessing loans for their businesses. In this study, therefore, the result shows that MFI s in Ghana do not use collateral substitute effectively to promote financial inclusion for the poor.

Managerial training has the potential to promote financial inclusion for the poor

The research result indicates that managerial training has a positive impact on financial inclusion for the poor. MSMEs in developing countries are said to lack the necessary managerial expertise which is needed to run enterprises successfully (Odell, 2010). MSME managers are therefore supposed to be provided with managerial training which would increase both the cognitive and managerial skills in order to have a positive impact on venture performance (Newman et al., 2014). In the Ghanaian microfinance environment, most MFI s especially those which adopt the group lending methodology provide regular training to their borrowers usually prior to loan disbursements. In most cases, groups undergo six weeks of training before loans were disbursed. Usually, training content includes basic financial management, customer management, product and service innovation as well as effective resource utilisation. Inadequate and unavailability of managerial training to MSME managers leads to failure of enterprises and this poses repayment difficulties to MFI s and this negatively affects financial inclusion. Effective managerial training ensures enterprise success and guarantees loan repayment (Chi et al., 2008; Newman et al., 2014). In this study, therefore, the result shows that MFI s in Ghana provide managerial training which promotes financial inclusion for the poor.

In summary, from the model presented in this study, $H_{1a}$, $H_{1b}$ and $H_{1d}$ are accepted. However, $H_{1c}$ is rejected. It is important for MFI s in Ghana to adopt an effective use of collateral substitutes which promotes financial inclusion. The demand for physical properties to secure microfinance loans and the unwholesome use of collateral substitutes will endanger the current gains made in financial inclusion for the poor in Ghana. This is important because the support for MSMEs will create the needed employment and thereby reduce the current level of poverty and unemployment in Ghana. Also, the use of appropriate credit risk management techniques as indicated in this study would increase portfolio viability and recovery rates of MFI s leading to sustainability.

Conclusion

MSMEs still grapple with access to financial capital to support their operations in Ghana (Dzansi and Atiase, 2014; Syed and Faisal, 2011). In response to this challenge, microfinance has become a dominant source of funding for MSMEs whereby access is created to microcredit for investment purposes. However, microfinance has been commercialised to the extent that, it has been associated with a high cost due to the inability of the MFI s to manage the credit risk which is associated with the poor effectively. It is therefore recommended that if MFI s could adopt credit risk management techniques which are pro-poor, it will promote financial inclusion for the poor as well as reduce the current default rates which are experienced in the microfinance industry. This study, therefore, suggests that there is the need for an effective use of pro-poor credit risk management techniques instead of the usual credit risk management tools which are used in the formal financial sectors. This is essential
because an attempt to use such tools in the microfinance sector would further exclude the poor from accessing finance and thereby financial inclusion will remain an elusive concept.

**Implications for policy and practice**

This study has implications for policy and practice in the sense that, there is the need for MFIs in Ghana to understand the need for providing financial services to MSMEs which contribute largely to national economic development. In providing such services, MFIs are supposed to use pro-poor credit risk management techniques which do not push the entrepreneur further away from engaging in the Ghanaian financial system. It is expected also that adopting a pro-poor credit risk management technique in managing a loan portfolio would reduce default since clients would be provided with adequate business training and other associated services. In the same vein, Government regulations should not be seen to hinder free enterprise culture but rather to support and provide incentives for the economically active poor. Also, there is the need to continuously increase access to cheap and timely credit to MSMEs. Both the government and the private sector financial institutions in Ghana have a major role to play in providing such opportunities for MSMEs to thrive (Boateng and Agyei, 2013). Also, in the design of credit products for SMEs, it is important for MFIs in Ghana to design and structure loan products which are flexible in nature and take into account the cash flow and the gestation period of the funded projects.

**Future research direction**

The findings from this study highlight some further research areas which future research could be focused. Firstly, future research could focus on other financial service providers in Ghana such as the commercial banks to investigate how such institutions contribute to the financial inclusion agenda for the poor. Secondly, the researchers suggest that future research could be extended beyond the Ghanaian environment in testing the model proposed in this study. Probably other African countries could be engaged in a similar study. Finally, it is suggested that a mixed research strategy could be explored in future research endeavour of this kind whereby the qualitative findings could be used to validate the findings in this study.
References


